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Poplar River Cooperative Monitoring Arrangement ... data exchange, United States contribution

POPLAR RIVER

COOPERATIVE MONITORING

ARRANGEMENT

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FOURTH QUARTER DATA EXCHANGE

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INTRODUCTION

1986 - FOURTH QUARTER DATA EXCHANGE POPLAR RIVER BASIN

The Poplar River Bilateral Monitoring Committee was authorized by the Governments of Canada and the United States under the Poplar River Cooperative Monitoring Arrangement dated September 23, 1980. The Committee is composed of representatives of the Governments of the United States, State of Montana, Canada, and Province of Saskatchewan. In addition to the representatives of governments, two ex officio members who are local representatives of the State of Montana and Province of Saskatchewan participate in activities of the Committee.

One responsibility of the Committee includes the on-going quarterly exchange of results of water quantity, water quality and air quality monitoring programs. The programs are being conducted in Canada and the United States at or near the International Boundary by cooperative monitoring agencies in accordance with the Technical Monitoring Schedules. Monitoring information is to be transmitted by each Committee co-chairman to his counterpart co-chairman within a reasonable period after the termination of each quarter. In addition, preselected parties are to receive copies of the quarterly exchange.

This package represents information collected by United States sources for the Poplar River basin during the fourth quarter of 1986. Included are data for surface water quantity and quality, ground-water levels and ground-water quality, and air quality. The large amount of air quality data precludes it from being incorporated onto the data report. Hence, it is separate.

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STREAMFLOW MONITORING

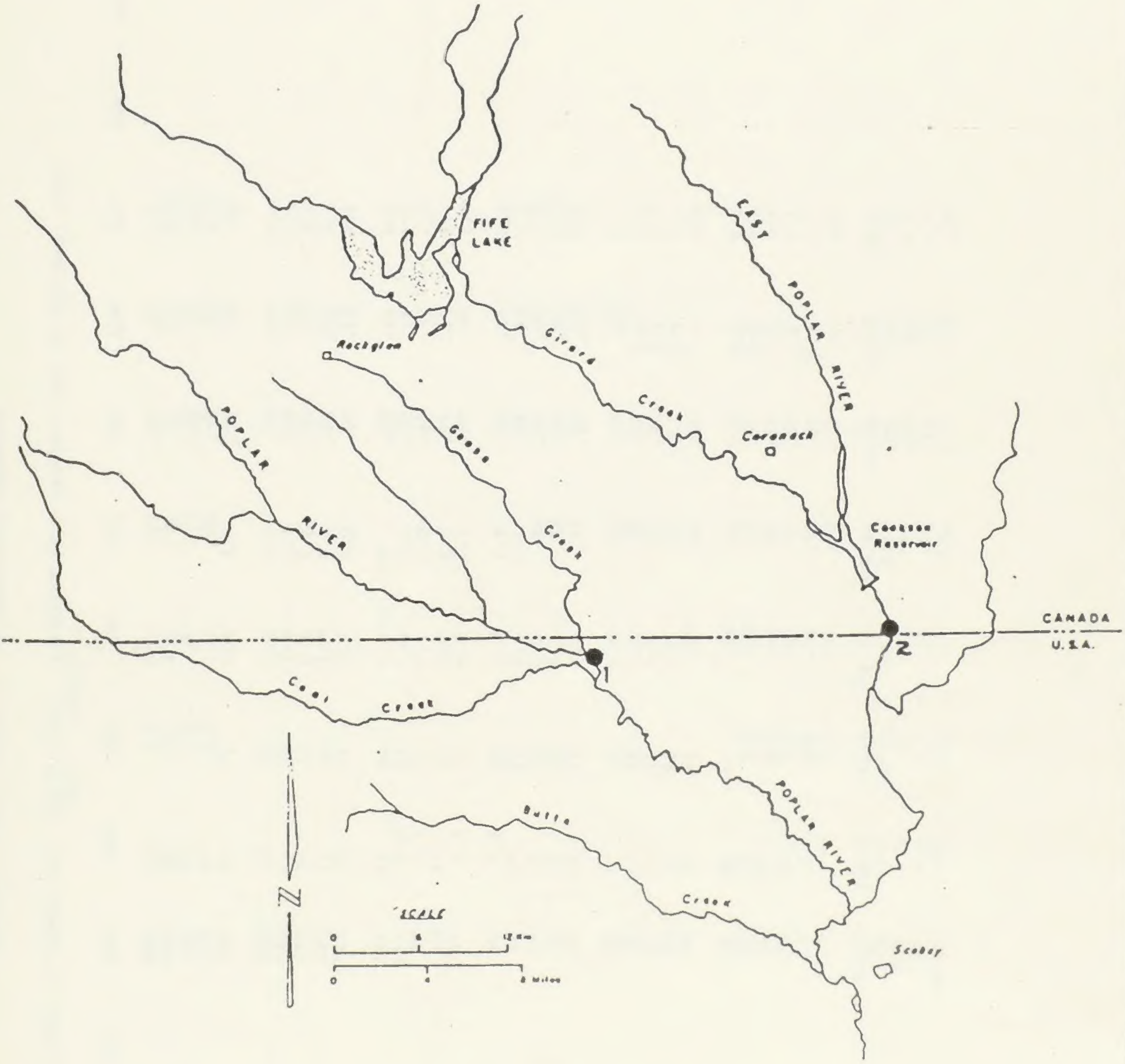
Responsible Agency: U.S. Geological Survey

Daily mean discharge or levels and instantaneous monthly extremes as normally published in surface water data publications.

No. on Map	USGS Station No.	Station Name
1	06178000	Poplar River at International Boundary

Responsible Agency: Environment Canada

2	06178500	East Poplar River at International Boundary



HYDROMETRIC GAUGING STATIONS

06178000 POPLAR RIVER AT INTERNATIONAL BOUNDARY

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1986 TO DECEMBER 1986
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			900	20	7.9	4.6	.59	.09	.28	4.9		
2			700	20	7.1	4.0	.79	.10	.16	7.5		
3			600	20	6.5	4.9	.72	.10	.12	8.6		
4			577	19	6.3	4.6	.70	.10	.10	9.1		
5			587	18	14	3.8	3.4	.12	.12	8.5		
6			390	18	40	3.2	4.7	.13	.11	8.6		
7			192	16	52	2.6	2.1	.09	.13	7.5		
8			175	14	37	2.5	1.6	.09	.13	8.7		
9			182	13	41	3.7	1.4	.08	.13	9.6		
10			145	12	69	2.7	4.0	.08	.23	9.7		
11			151	11	63	2.1	19	.09	.24	8.9		
12			116	9.8	88	1.5	9.6	.09	.19	8.5		
13			88	9.4	52	1.1	5.0	.09	.15	7.5		
14			79	12	37	3.1	2.7	.08	.15	9.4		
15			67	8.8	29	6.8	2.1	.07	.15	7.7		
16			60	9.3	25	3.2	1.9	.08	.15	6.5		
17			52	11	21	2.4	1.4	.08	.15	6.3		
18			44	12	18	2.0	.87	.07	.15	6.2		
19			36	12	16	2.2	.50	.06	.34	6.0		
20			30	12	15	2.2	.37	.06	.57	5.8		
21			28	11	13	1.8	.30	.07	.83	5.9		
22			27	11	12	1.6	.23	.09	2.4	6.0		
23			24	11	12	1.3	.20	.07	3.5	5.9		
24			23	11	12	1.0	.19	.07	2.9	5.7		
25			25	12	12	.77	.14	.08	5.3	5.7		
26			22	12	11	.59	.14	.08	8.2	5.8		
27			25	12	9.7	.49	.15	.07	7.4	5.8		
28			25	11	8.6	.45	.13	.07	7.0	5.7		
29			22	10	7.1	.65	.13	.07	6.2	5.7		
30			21	8.9	6.3	.71	.11	.09	5.3	7.1		
31			20	---	5.3	---	.10	.25	---	6.1		
TOTAL			5433	387.2	753.8	72.56	65.26	2.76	52.78	220.9		
MEAN			175	12.9	24.3	2.42	2.11	.09	1.76	7.13		
MAX			900	20	88	6.8	19	.25	8.2	9.7		
MIN			20	8.8	5.3	.45	.10	.06	.10	4.9		
AC-FT			10780	768	1500	144	129	5.5	105	438		

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1986 TO DECEMBER 1986
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	2.8	2.9	150	7.6	7.9	5.6	3.2	2.9	2.4	2.8	2.7	2.8
2	2.9	2.9	230	14	7.0	4.1	2.9	2.8	2.4	3.3	2.9	2.9
3	2.9	2.9	230	8.5	7.2	4.0	2.9	2.9	2.8	3.0	3.0	2.7
4	2.9	3.0	231	5.8	7.7	3.7	3.1	2.9	2.8	3.1	2.9	2.7
5	2.7	2.9	219	5.4	28	3.3	5.3	2.9	2.7	3.0	2.8	2.6
6	2.8	2.9	202	7.0	18	3.0	4.9	2.9	2.7	2.9	2.8	2.6
7	2.8	2.7	155	7.2	7.9	3.2	3.9	2.9	2.6	2.9	2.8	2.6
8	2.8	2.5	75	5.5	7.5	3.2	3.3	2.8	2.5	3.3	2.9	2.6
9	2.9	2.4	71	4.5	13	4.2	3.0	2.8	2.7	3.0	2.5	2.3
10	2.9	2.2	70	4.3	12	4.5	3.3	2.8	3.0	3.3	2.3	2.4
11	3.1	2.1	73	13	9.0	3.8	3.6	2.5	3.0	2.8	2.4	2.6
12	3.0	2.1	70	6.0	18	5.8	3.4	2.6	2.9	2.8	2.3	2.6
13	3.0	2.1	66	5.6	12	5.0	3.2	2.5	2.6	2.8	2.3	2.6
14	3.0	2.1	63	12	13	3.7	3.0	2.5	2.6	2.8	2.5	2.6
15	3.0	2.2	58	5.9	15	3.3	2.9	2.5	2.6	2.8	2.6	2.7
16	3.0	2.3	56	4.6	22	2.6	2.8	2.3	2.8	3.0	2.7	2.6
17	3.0	2.3	51	4.9	9.0	2.6	2.9	2.2	2.8	2.8	2.7	2.6
18	3.0	2.2	54	8.3	8.4	2.7	2.8	2.3	2.7	2.8	2.7	2.5
19	3.1	2.1	43	11	7.8	4.2	2.8	2.3	2.9	2.7	2.7	2.5
20	3.1	2.0	39	6.5	7.4	4.0	2.9	2.3	3.1	2.6	2.6	2.5
21	2.9	2.1	36	4.7	7.0	3.5	2.7	2.3	3.5	2.6	2.8	2.5
22	2.9	2.2	43	4.1	8.6	3.2	2.6	2.4	3.0	2.7	2.8	2.5
23	2.9	2.4	26	8.7	10	3.0	2.6	2.3	2.8	2.6	2.7	2.6
24	2.9	2.9	24	6.2	8.9	2.8	2.6	2.4	2.6	2.6	2.8	2.6
25	2.9	3.7	39	4.5	7.6	2.7	2.6	2.3	4.0	2.6	2.8	2.6
26	2.9	46	17	4.2	7.1	2.8	2.6	2.4	4.1	2.7	2.8	2.6
27	2.8	19	16	4.0	6.9	2.7	2.6	2.4	3.5	2.7	2.8	2.6
28	2.9	28	15	4.0	7.0	2.6	2.7	2.4	3.1	2.7	2.8	2.6
29	2.8	---	24	4.7	6.9	2.8	2.7	2.4	2.8	2.7	2.8	2.6
30	2.9	---	14	9.6	6.9	3.1	2.8	2.5	2.7	2.8	2.7	2.6
31	2.9	---	18	---	7.9	---	3.1	2.5	---	2.9	---	2.6
TOTAL	90.4	155.1	2478	202.3	322.6	105.7	95.7	79.2	86.7	88.1	80.9	80.4
MEAN	2.92	5.54	79.9	6.74	10.4	3.52	3.09	2.55	2.89	2.84	2.70	2.59
MAX	3.1	46	231	14	28	5.8	5.3	2.9	4.1	3.3	3.0	2.9
MIN	2.7	2.0	14	4.0	6.9	2.6	2.6	2.2	2.4	2.6	2.3	2.3
AC-FT	179	308	4920	401	640	210	190	157	172	175	160	159

SURFACE WATER QUALITY MONITORING

Station Location

Responsible Agency: U.S. Geological Survey

No. on Map	USGS Station No.	Station Name
1	06178000	Poplar River at International Boundary
2	06178500	East Poplar River at International Boundary
3	06179000	East Poplar River near Scobey

PARAMETERS

WATSTORE*			Sampling Frequency		
Code	Parameter	Analytical method	No. 1	2	3
00410	Alkalinity-field	Elect. Titration	M	M	M
90410	Alkalinity-lab	Elect. Titration	M	M	M
01106	Aluminum-diss	AA	SA	SA	SA
00610	Ammonia-tot	Colorimetric	M	M	M
00625	Ammonia+Org N-tot	Colorimetric	M	M	M
01000	Arsenic-diss	AA, hydride	SA	SA	SA
01002	Arsenic-tot	AA, hydride	A	A	A
01010	Beryllium-diss	AA	SA	SA	SA
01012	Beryllium-tot/rec	AA-Persulfate	A	A	A
01020	Boron-diss	Colorimetric	M	M	M
01025	Cadmium-diss	AA	SA	SA	SA
01027	Cadmium-tot/rec	AA-persulfate	A	A	A
00915	Calcium	AA	M	M	M
00680	Carbon-tot Org	Wet Oxidation	SA	SA	SA
00940	Chloride-diss	Ion chromatography	M	M	M
01030	Chromium-diss	AA	SA	SA	SA
01034	Chromium-tot/rec	AA-persulfate	A	A	A
00080	Color	Electrometric, visual	M	M	M
00095	Conductivity	Wheatstone Bridge	M	D	M
01040	Copper-diss	AA	SA	SA	SA
01042	Copper-tot/rec	AA-persulfate	A	A	A
00061	Discharge-inst	Direct measur.	M	M	M
00950	Fluoride	Electrometric	M	M	M
01046	Iron-diss	AA	M	M	M
01045	Iron-tot/rec	AA-persulfate	A	A	A
01049	Lead-diss	AA	SA	SA	SA
01051	Lead-tot/rec	AA-persulfate	A	A	A
00925	Magnesium-diss	AA	M	M	M
01056	Manganese-diss	AA	SA	SA	SA
01055	Manganese-tot/rec	AA-persulfate	A	A	A
01065	Nickel-diss	AA	SA	SA	SA
01067	Nickel tot/rec	AA-persulfate	A	A	A
00615	Nitrite-tot	Ion-chromatography	M	M	M
00630	Nitrate+Nitrite-tot	Colorimetric	M	M	M
00300	Oxygen-diss	Winkler/meter	M	M	M
70507	Phos, Ortho-tot	Colorimetric	M	M	M
00400	pH	Electrometric	M	M	M
00665	Phophorous-tot	Colorimetric	M	M	M
00935	Potassium-diss	AA	M	M	M
00931	SAR	Calculated	M	M	M
80154	Sediment-conc.	Filtration-gravimetric	M	M	M
80155	Sediment-load	Calculated	M	M	M
01145	Selenium-diss	AA, hydride	SA	SA	SA
01147	Selenium tot/rec	AA, hydride	A	A	A
00955	Silica	Colorimetric	M	M	M
00930	Sodium	AA	M	M	M
00945	Sulfate-diss	Colorimetric	M	M	M
70301	Total Dissolved Solids	Calculated	M	M	M
00010	Temp Water	Toluene	M	M	M
00020	Temp Air	Toluene	M	M	M
00076	Turbidity	Nephelometric	M	M	M
80020	Uranium-diss	Fluorimetric	-	MC	-
01090	Zinc-diss	AA	SA	SA	SA
01092	Zinc-tot/rec	AA-persulfate	A	A	A

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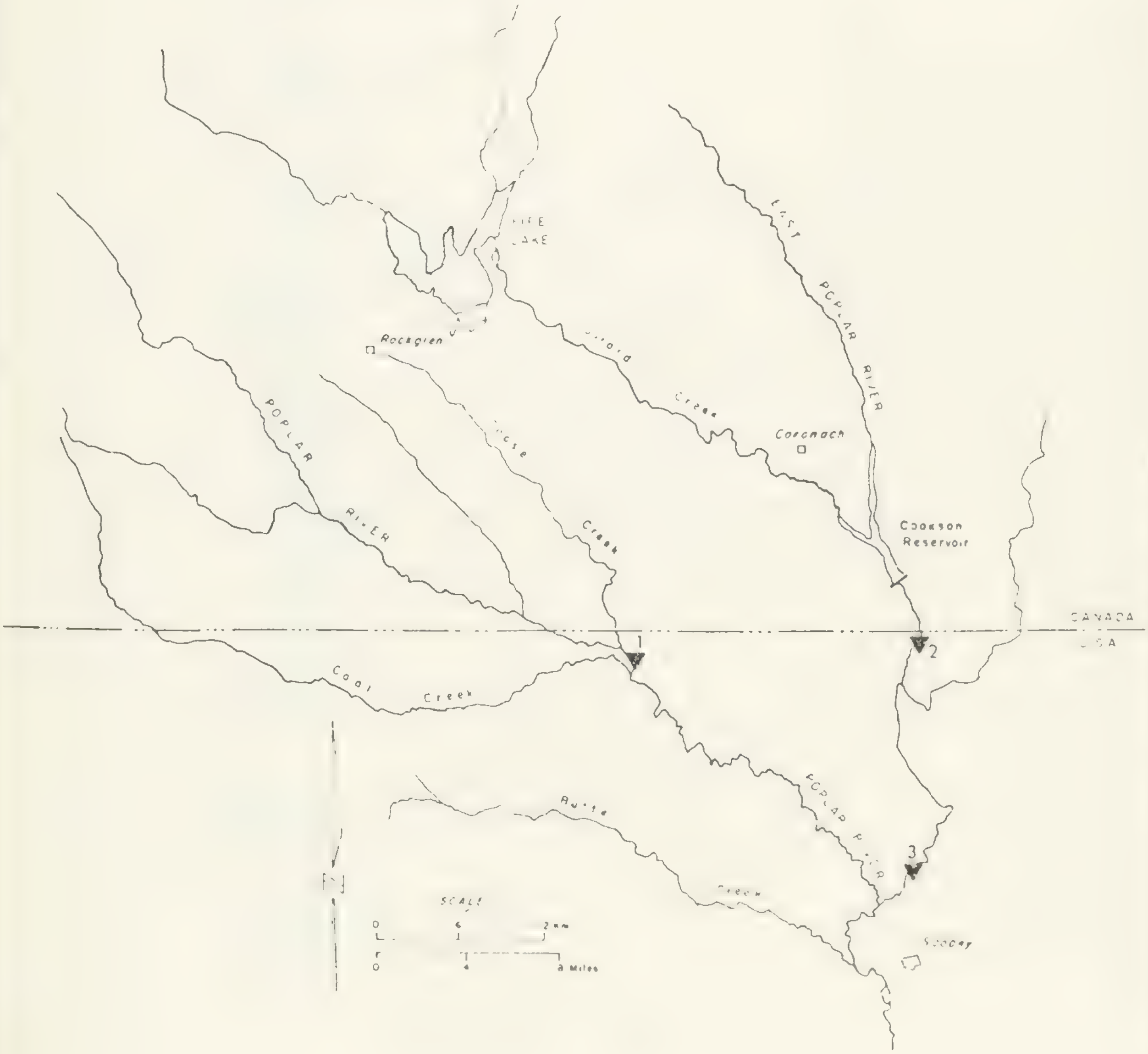
*Computer storage and retrieval system - USGS

Symbols: C-continuous; D-daily; M-monthly; MC-monthly composite; A-annually at high flow; SA-semi-annually at low and high flow; AA-atomic absorption; tot-total; rec-recoverable; diss-dissolved



SURFACE WATER QUALITY MONITORING STATIONS

06178000 - POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	TIME	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	CLOUD COVER (PER-CENT) (00032)	WIND SPEED (MILES PER HOUR) (00035)	WEATHER (WMO CODE NUMBER) (00041)	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TUR-BID-ITY (NTU) (00076)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	OXYGEN, DIS-SOLVED (MG/L) (00300)
MAR 1986 25...	1130	4.5	2.0	696	50	E20	1	26	1.5	60	738	8.0
APR 16...	1300	3.0	2.0	692	100	E7.0	3	9.9	3.1	30	1030	12.4
MAY 15...	1200	11.0	9.0	692	99	E25	3	34	4.2	60	1080	7.8
JUN 18...	1030	22.0	25.0	697	0	E0	0	2.0	2.2	45	1150	7.7
JUL 15...	1630	26.5	29.0	696	0	E0	0	1.9	40	30	1220	12.2
AUG 19...	0945	18.0	25.0	698	0	E0	0	0.08	17	30	1730	7.5
SEP 16...	1300	8.0	9.0	701	100	E0	3	0.15	4.8	20	1410	8.0
OCT 14...	1600	8.0	16.0	708	0	E15	0	11	9.0	65	1500	11.0
NOV 12...	1500	0.0	-15.0	719	0	E25	0	5.0	2.7	9	1400	14.0

WATER QUALITY DATA

DATE	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	PH (STAND-ARD UNITS) (00400)	PH LAB (STAND-ARD UNITS) (00403)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00690)
MAR 1986											
25...	68	8.5	8.3	1.8	0.52	0.02	<0.01	0.6	<0.10	0.05	9.5
APR											
16...	102	8.4	8.4	3.3	0.45	0.05	<0.01	0.5	<0.10	0.04	--
MAY											
15...	78	8.7	8.4	1.9	1.1	0.19	<0.01	1.3	<0.10	0.06	--
JUN											
13...	97	8.7	8.7	1.7	0.93	0.07	<0.01	1.0	<0.10	0.04	--
JUL											
15...	167	9.0	9.0	0.9	1.0	0.03	0.01	1.1	<0.10	0.12	--
AUG											
19...	87	8.9	8.8	1.5	--	<0.01	<0.01	1.0	<0.10	--	12
SEP											
16...	74	8.4	8.4	3.9	--	<0.01	<0.01	0.8	<0.10	0.03	--
OCT											
14...	101	8.4	8.4	4.1	1.4	0.04	0.01	1.4	<0.10	<0.20	--
NOV											
12...	102	8.3	8.2	5.9	0.47	0.03	<0.01	0.5	<0.10	0.02	--

06178000 - POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	HARD- NESS (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	PERCENT SODIUM (00932)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
MAR 1986											
25...	240	43	31	78	2	41	7.8	3.8	94	0.3	11
APR											
16...	300	52	42	140	4	49	6.7	5.4	160	0.4	10
MAY											
15...	360	51	57	140	3	45	9.9	5.5	200	0.3	11
JUN											
13...	220	22	41	170	5	61	7.6	6.0	160	0.4	0.8
JUL											
15...	200	23	35	200	6	67	8.2	6.3	220	0.4	3.9
AUG											
19...	230	19	44	330	10	75	8.0	17	410	0.6	0.2
SEP											
16...	360	50	56	280	7	62	8.8	11	380	0.4	7.8
OCT											
14...	320	48	48	240	6	61	9.8	8.7	[illegible]	0.4	12
NOV											
12...	430	69	63	190	4	48	9.0	8.0	230	0.5	15

06178000 - POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (C1000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (C1030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
MAR 1986											
25...	2	2	<0.5	<10	440	<1	<1	<10	<10	2	6
APR											
15...	--	--	--	--	700	--	--	--	--	--	--
MAY											
15...	--	--	--	--	810	--	--	--	--	--	--
JUN											
18...	--	--	--	--	1200	--	--	--	--	--	--
JUL											
15...	--	--	--	--	1400	--	--	--	--	--	--
AUG											
19...	4	--	<0.5	--	1900	<1	--	<10	--	2	--
SEP											
16...	--	--	--	--	1800	--	--	--	--	--	--
OCT											
14...	--	--	--	--	1400	--	--	--	--	--	--
NOV											
12...	--	--	--	--	1200	--	--	--	--	--	--

06173000 - POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)
MAR 1936											
25...	280	130	1	2	20	13	1	1	5	<10	10
APR											
16...	--	34	--	--	--	--	--	--	--	--	--
MAY											
15...	--	150	--	--	--	--	--	--	--	--	--
JUN											
18...	--	32	--	--	--	--	--	--	--	--	--
JUL											
15...	--	79	--	--	--	--	--	--	--	--	--
AUG											
19...	--	16	<5	--	--	5	<1	--	7	--	<10
SEP											
16...	--	13	--	--	--	--	--	--	--	--	--
OCT											
14...	--	34	--	--	--	--	--	--	--	--	--
NOV											
12...	--	25	--	--	--	--	--	--	--	--	--

06178000 - POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SPE- CIFIC CON- DUCT- ANCE LAB (US/CM) (90095)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)
MAR 1980											
25...	<1	<1	460	32	0.63	61	0.02	10	0.69	750	326
APR											
16...	--	--	680	18	0.92	85	0.02	14	0.37	1060	434
MAY											
15...	--	--	770	71	1.0	61	0.03	103	9.5	1160	494
JUN											
13...	--	--	680	3.6	0.93	71	0.01	21	0.11	1100	459
JUL											
15...	--	--	770	3.9	1.1	82	0.07	25	0.13	1120	460
AUG											
19...	<1	--	1200	0.25	1.6	--	0.03	--	--	1790	583
SEP											
16...	--	--	1100	0.46	1.5	--	0.02	--	--	1680	556
OCT											
14...	--	--	980	29	1.3	95	0.04	191	5.7	1490	535
NOV											
12...	--	--	960	13	1.3	78	<0.01	16	0.22	1440	617

06173500 - EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	TIME	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	BAROMETRIC PRESSURE (MM OF HG) (00025)	CLOUD COVER (PERCENT) (00032)	WIND SPEED (MILES PER HOUR) (00035)	WEATHER (WMO CODE NUMBER) (00041)	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TURBIDITY (NTU) (00076)	COLOR (PLATINUM-COBALT UNITS) (00080)	SPECIFIC CONDUCTANCE (US/CM) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)
JAN 1986												
14...	1330	0.0	3.5	699	0	E0	0	3.1	2.0	7	1500	5.7
FEB												
18...	1145	0.0	-19.0	695	100	E0	71	5.3	2.0	12	1480	5.7
MAR												
24...	1515	3.0	12.0	692	75	E7.0	1	22	5.3	30	1120	8.5
APR												
16...	1030	3.0	2.0	698	100	E3.0	3	4.2	6.0	15	1160	11.0
MAY												
15...	1000	8.0	6.0	695	95	E17	3	12	3.2	20	1210	9.3
JUN												
17...	1430	21.5	28.0	701	0	E17	0	2.4	4.2	25	1220	8.3
JUL												
08...	1130	20.5	24.0	705	0	E0	0	3.7	4.5	30	1320	8.9
08...	1145	20.5	24.0	705	0	E0	0	3.7	3.5	30	1320	8.9
08...	1200	20.5	24.0	705	0	E0	0	3.7	2.5	30	1320	5.9
AUG												
18...	1430	21.0	29.0	700	0	E0	0	2.3	--	15	1350	7.5
SEP												
17...	1000	8.5	7.5	704	90	E0	2	3.1	2.5	15	1450	7.8
OCT												
15...	1030	5.5	8.0	709	40	E0	1	2.6	5.3	8	1440	12.2
NOV												
13...	0930	0.0	-15.0	704	90	E25	2	2.4	1.9	3	1860	13.6
DEC												
15...	1400	0.0	2.0	706	0	E0	0	3.2	1.2	7	1530	8.0

06178500 - EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	PH (STAND-ARD UNITS) (00400)	PH LAB (STAND-ARD UNITS) (00403)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
JAN 1986												
14...	43	7.7	7.7	22	1.3	0.33	0.77	0.01	0.19	1.1	0.20	0.01
FEB												
18...	43	7.6	7.6	23	1.2	0.25	0.75	<0.01	--	1.0	0.20	0.02
MAR												
24...	79	8.6	8.5	1.9	1.4	--	<0.01	0.01	0.19	1.2	0.20	0.05
APR												
15...	90	8.3	8.3	4.1	1.1	0.82	0.18	<0.01	--	1.0	0.10	0.04
MAY												
15...	87	8.7	8.4	1.6	--	0.84	0.06	0.01	--	0.9	<0.10	0.03
JUN												
17...	103	8.6	8.3	2.4	--	0.96	0.04	<0.01	--	1.0	<0.10	0.03
JUL												
08...	107	8.4	8.3	3.5	--	0.6	0.10	<0.01	--	0.7	<0.10	0.03
08...	107	8.4	8.3	3.6	--	0.53	0.07	<0.01	--	0.6	<0.10	0.03
08...	107	8.4	8.4	3.5	--	0.62	0.08	<0.01	--	0.7	<0.10	0.03
AUG												
18...	92	8.3	8.2	4.7	--	0.57	0.03	<0.01	--	0.6	<0.10	0.03
SEP												
17...	73	8.1	8.0	7.6	0.6	0.46	0.04	0.01	0.09	0.5	0.10	0.02
OCT												
15...	105	8.4	8.1	4.0	1.5	1.1	0.24	0.02	0.18	1.3	0.20	<0.20
NOV												
13...	101	7.7	7.8	21	1.4	0.42	0.78	0.02	0.18	1.2	0.20	0.05
DEC												
15...	59	7.7	7.7	22	1.0	--	0.80	<0.01	--	0.8	0.20	<0.01

06178500 - EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	HARD- NESS (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	PERCENT SODIUM (00932)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
JAN 1986												
14...	--	400	82	48	190	4	50	7.2	6.3	300	0.3	16
FEB												
18...	--	420	86	50	200	4	50	7.6	6.1	290	0.4	15
MAR												
24...	10	270	39	43	160	4	54	16	6.2	230	0.3	2.1
APR												
16...	--	290	44	44	170	4	55	12	6.1	240	0.3	3.9
MAY												
15...	--	310	46	48	170	4	53	13	5.8	250	0.2	3.1
JUN												
17...	--	280	41	44	180	5	57	10	5.1	240	0.3	5.0
JUL												
08...	9.0	340	59	48	170	4	51	8.1	4.9	250	0.4	8.5
08...	8.9	350	60	48	170	4	51	8.2	4.8	250	0.3	8.5
08...	9.6	350	60	46	170	4	51	8.2	4.8	250	0.3	8.5
AUG												
18...	--	350	57	51	210	5	56	8.2	6.1	290	0.3	9.4
SEP												
17...	5.0	380	70	49	200	5	53	7.8	6.2	280	0.3	13
OCT												
15...	--	390	74	51	210	5	53	7.3	6.0	290	0.3	13
NOV												
13...	--	480	93	59	250	5	53	9.5	8.9	390	0.5	18
DEC												
15...	--	420	37	50	200	4	50	7.2	5.9	300	0.3	16

06178500 - EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
JAN 1986												
14...	--	--	--	--	1800	--	--	--	--	--	--	--
FEB												
18...	--	--	--	--	1800	--	--	--	--	--	--	--
MAR												
24...	3	3	<0.5	<10	1200	<1	<1	<10	<10	2	4	510
APR												
16...	--	--	--	--	1300	--	--	--	--	--	--	--
MAY												
15...	--	--	--	--	1300	--	--	--	--	--	--	--
JUN												
17...	--	--	--	--	1600	--	--	--	--	--	--	--
JUL												
08...	5	--	--	--	1700	--	--	--	<10	--	3	--
08...	5	--	--	--	1700	--	--	--	<10	--	4	--
08...	5	--	--	--	1700	--	--	--	<10	--	2	--
AUG												
18...	--	--	--	--	2000	--	--	--	--	--	--	--
SEP												
17...	2	--	<0.5	--	1900	<1	--	<10	--	2	--	--
OCT												
15...	--	--	--	--	1900	--	--	--	--	--	--	--
NOV												
13...	--	--	--	--	2300	--	--	--	--	--	--	--
DEC												
15...	--	--	--	--	1800	--	--	--	--	--	--	--

06178500 - EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)
JAN 1986											
14...	14	--	--	--	--	--	--	--	--	--	--
FEB											
18...	14	--	--	--	--	--	--	--	--	--	--
MAR											
24...	16	1	2	50	19	<1	2	6	30	10	<1
APR											
16...	31	--	--	--	--	--	--	--	--	--	--
MAY											
15...	13	--	--	--	--	--	--	--	--	--	--
JUN											
17...	13	--	--	--	--	--	--	--	--	--	--
JUL											
08...	16	--	<5	--	22	--	3	--	20	<10	<1
08...	12	--	<5	--	20	--	2	--	10	<10	<1
08...	12	--	<5	--	20	--	2	--	10	<10	<1
AUG											
18...	14	--	--	--	--	--	--	--	--	--	--
SEP											
17...	14	<5	--	--	12	3	--	31	--	20	<1
OCT											
15...	9	--	--	--	--	--	--	--	--	--	--
NOV											
13...	30	--	--	--	--	--	--	--	--	--	--
DEC											
15...	32	--	--	--	--	--	--	--	--	--	--

06178500 - EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	SELENIUM, TOTAL (UG/L AS SE) (01147)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SPECIFIC CONDUCTANCE LAB (US/CM) (90095)	ALKALINITY LAB (MG/L AS CACO3) (90410)
JAN 1986											
14...	--	990	8.2	1.3	38	<0.01	5.8	76	0.63	1490	567
FEB											
18...	--	940	13	1.3	53	0.02	5.3	51	0.73	1530	475
MAR											
24...	<1	750	44	1.0	83	0.01	6.2	42	2.5	1150	422
APR											
16...	--	730	8.5	1.1	91	0.02	4.9	35	0.4	1200	426
MAY											
15...	--	790	27	1.1	70	<0.01	--	37	2.9	1240	417
JUN											
17...	--	800	5.2	1.1	97	<0.01	--	32	0.21	1220	450
JUL											
08...	--	830	8.3	1.1	--	<0.01	--	--	--	1230	463
08...	--	830	8.3	1.1	--	<0.01	--	--	--	1230	467
08...	--	830	8.3	1.1	96	<0.01	--	27	0.27	1230	463
AUG											
18...	--	920	5.7	1.3	--	<0.01	--	--	--	1330	485
SEP											
17...	--	930	7.8	1.3	--	0.01	2.7	--	--	1420	495
OCT											
15...	--	950	6.6	1.3	58	0.01	6.6	40	0.28	1470	493
NOV											
13...	--	1200	7.5	1.6	40	0.02	6.2	18	0.12	1720	550
DEC											
15...	--	1000	8.6	1.4	--	0.01	4.4	--	--	1470	560

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C) CALENDAR YEAR JANUARY 1986 TO DECEMBER 1986
ONCE-DAILY

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1390	1290	1170	1150	1280	1270	1390	1420	1390	1480	1400	1410
2	1320	1340	1230	1170	1250	1280	1390	1410	1370	1460	1420	1360
3	1360	1360	1200	1240	1290	1290	1410	1410	1390	1460	1430	1460
4	1380	1370	1220	1190	1300	1300	1400	1400	1400	1420	1410	1470
5	1400	1380	1180	1200	1280	1320	1370	1380	1380	1440	1400	1490
6	1340	1400	1160	1250	1330	1420	1370	1400	1370	1390	1420	1580
7	1380	1390	1160	1330	1390	1390	1320	1400	1340	1420	1410	1570
8	1340	1450	1160	1300	1340	1420	1400	1390	1400	1410	1630	1470
9	1410	1400	1150	1250	1360	1400	1390	1400	1430	1470	1610	1530
10	1400	1500	1160	1290	1480	1380	1390	1420	1420	1440	1620	1600
11	1380	1520	1150	1320	1390	1350	1400	1430	1380	1430	1790	1610
12	1390	1480	1150	1230	1450	1340	1420	1400	1370	1440	1810	1510
13	1430	1480	1150	1180	1400	1320	1420	1410	1350	1440	1770	1510
14	1450	1480	1150	1260	1330	1340	1410	1420	1450	1460	1780	1500
15	1440	1500	1140	1220	1260	1270	1410	1410	1450	1450	1680	1480
16	1450	1470	1140	1210	1200	1260	1410	1410	1400	1440	1580	1500
17	1440	1460	1140	1230	1180	1280	1430	1410	1400	1450	1520	1490
18	1450	1460	1140	1350	1210	1320	1420	1390	1400	1470	1490	1470
19	1440	1470	1140	1440	1270	1340	1440	1400	1400	1480	1460	1440
20	1440	1490	1140	1210	1270	1390	1430	1400	1450	1680	1570	1530
21	1440	1470	1140	1230	1290	1380	1430	1420	1490	1640	1580	1540
22	1490	1470	1130	1220	1300	1390	1440	1430	1460	1530	1530	1560
23	1490	1480	1130	1290	1270	1370	1440	1420	1440	1490	1540	1510
24	1490	1480	1150	1400	1280	1380	1420	1420	1440	1450	1460	1480
25	1490	1440	1150	1250	1260	1380	1420	1430	1430	1460	1450	1450
26	1480	---	1130	1240	1270	1390	1430	1480	1400	1470	1450	1450
27	1500	---	1160	1290	1280	1390	1440	1440	1380	1470	1460	1460
28	1500	---	1170	1360	1280	1400	1430	1420	1380	1460	1460	1460
29	1480	---	1160	1440	1280	1400	1430	1410	1380	1460	1480	1470
30	1480	---	1130	1400	1280	1400	1430	1410	1460	1450	1480	1430
31	1500	---	1190	---	1280	---	1430	1410	---	1440	---	1470
TOTAL	44370	36030	35870	38140	40330	40560	43760	43850	42230	45450	46090	46310
MEAN	1430	1440	1160	1270	1300	1350	1410	1410	1410	1470	1540	1490
MAX	1500	1520	1230	1440	1480	1420	1440	1480	1490	1680	1810	1610
MIN	1320	1290	1130	1150	1180	1260	1320	1380	1340	1390	1400	1360

06179000 - EAST FORK POPLAR RIVER NEAR SCOBEY, MT.

WATER QUALITY DATA

DATE	TIME	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	CLOUD COVER (PER-CENT) (00032)	WIND SPEED (MILES PER HOUR) (00035)	WEATHER (WMO CODE NUMBER) (00041)	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TUR-BID-ITY (NTU) (00076)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	OXYGEN, DIS-SOLVED (MG/L) (00300)
JAN 1986												
14...	1500	0.0	3.0	700	0	E0	0	1.5	2.5	10	1540	--
MAR												
25...	0830	4.0	1.5	693	10	E20	1	33	10	40	1000	9.9
APR												
16...	0900	2.0	1.0	700	100	E3.0	3	12	4.8	15	1280	9.3
MAY												
14...	1500	13.0	8.5	693	65	E15	1	20	4.0	30	1280	9.2
JUN												
18...	0800	21.0	20.0	700	0	E0	0	3.7	4.1	40	1260	6.0
JUL												
16...	0900	20.0	21.0	700	0	E12	0	4.1	5.0	20	1300	6.5
AUG												
19...	0800	18.0	20.0	700	0	E0	0	1.4	--	40	1480	5.3
SEP												
17...	0800	9.0	7.0	704	90	E0	3	3.6	2.2	30	1640	8.0
OCT												
15...	1130	6.0	16.0	710	--	E0	0	3.0	22	25	1330	10.4
NOV												
13...	0715	0.0	-15.0	707	0	E25	0	3.0	2.8	11	1820	11.6
DEC												
15...	1500	0.0	1.0	706	0	E0	0	3.2	1.4	10	1950	11.8

06179000 - EAST FORK POPLAR RIVER NEAR SCOBEY, MT.

WATER QUALITY DATA

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	PH (STAND- ARD UNITS) (00400)	PH LAB (STAND- ARD UNITS) (00403)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
JAN 1986											
14...	--	7.5	7.6	41	--	0.82	<0.01	0.8	<0.10	0.01	--
MAR											
25...	83	8.8	8.5	1	1.3	0.03	<0.01	1.3	<0.10	0.06	11
APR											
16...	74	8.6	8.5	2.1	0.85	0.05	<0.01	0.9	<0.10	0.05	--
MAY											
14...	97	8.8	8.6	1.5	0.94	0.06	<0.01	1.0	<0.10	0.05	--
JUN											
16...	74	8.9	9.0	1	1.1	0.02	<0.01	1.1	<0.10	0.05	--
JUL											
16...	78	8.9	9.0	1.0	1.1	0.07	<0.01	1.2	<0.10	0.05	--
AUG											
19...	67	9.2	9.4	0.6	1.2	0.01	<0.01	1.2	<0.10	0.04	--
SEP											
17...	75	8.8	8.8	1.8	0.99	0.01	<0.01	1.0	<0.10	0.03	12
OCT											
15...	90	8.9	8.6	1.0	0.88	0.02	0.01	0.9	<0.10	<0.20	--
NOV											
13...	86	8.6	8.3	3.1	--	<0.01	<0.01	0.8	<0.10	0.03	--
DEC											
15...	88	8.1	5.0	9.9	0.26	0.04	<0.01	0.3	<0.10	<0.01	--

06179000 - EAST FORK POPLAR RIVER NEAR SCOBEY, MT.

WATER QUALITY DATA

DATE	HARD-NESS (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	PERCENT SODIUM (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
JAN 1986											
14...	490	92	62	250	5	52	8.7	9.0	350	0.4	20
MAR											
25...	240	35	37	140	4	54	15	5.6	210	0.3	2.5
APR											
16...	300	42	48	200	5	58	12	7.3	280	0.3	2.4
MAY											
14...	290	40	45	210	5	60	10	6.4	280	0.2	3.6
JUN											
15...	240	19	40	200	6	63	13	6.5	230	0.3	0.9
JUL											
16...	250	21	47	180	5	60	10	6.5	220	0.3	1.9
AUG											
19...	280	16	58	270	7	67	9.6	8.1	330	0.3	1.9
SEP											
17...	310	23	61	280	7	65	9.9	9.1	370	0.3	1.4
OCT											
15...	300	38	49	220	6	61	8.2	8.4	290	0.3	3.3
NOV											
13...	420	53	69	280	6	59	10	15	390	0.4	4.9
DEC											
15...	510	91	69	270	5	53	9.5	11	400	0.4	12

06179000 - EAST FORK POPLAR RIVER NEAR SCOBEY, MT.

WATER QUALITY DATA

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
JAN 1986 14...	--	--	--	--	1900	--	--	--	--	--	--
MAR 25...	3	3	<0.5	<10	970	<1	1	<10	<10	5	6
APR 16...	--	--	--	--	1300	--	--	--	--	--	--
MAY 14...	--	--	--	--	1400	--	--	--	--	--	--
JUN 18...	--	--	--	--	1600	--	--	--	--	--	--
JUL 16...	--	--	--	--	1500	--	--	--	--	--	--
AUG 19...	--	--	--	--	2300	--	--	--	--	--	--
SEP 17...	3	--	3	--	2300	<1	--	<10	--	2	--
OCT 15...	--	--	--	--	1800	--	--	--	--	--	--
NOV 13...	--	--	--	--	2100	--	--	--	--	--	--
DEC 15...	--	--	--	--	2200	--	--	--	--	--	--

06179000 - EAST FORK POPLAR RIVER NEAR SCOBEY, MT.

WATER QUALITY DATA

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)
JAN 1980 14...	--	33	--	--	--	--	--	--	--	--	--
MAR 25...	540	28	1	1	40	8	2	3	8	50	20
APR 16...	--	37	--	--	--	--	--	--	--	--	--
MAY 14...	--	33	--	--	--	--	--	--	--	--	--
JUN 18...	--	38	--	--	--	--	--	--	--	--	--
JUL 16...	--	34	--	--	--	--	--	--	--	--	--
AUG 19...	--	92	--	--	--	--	--	--	--	--	--
SEP 17...	--	34	<5	--	--	3	2	--	4	--	20
OCT 15...	--	33	--	--	--	--	--	--	--	--	--
NOV 13...	--	25	--	--	--	--	--	--	--	--	--
DEC 15...	--	19	--	--	--	--	--	--	--	--	--

06179000 - EAST FORK POPLAR RIVER NEAR SCOBEY, MT.

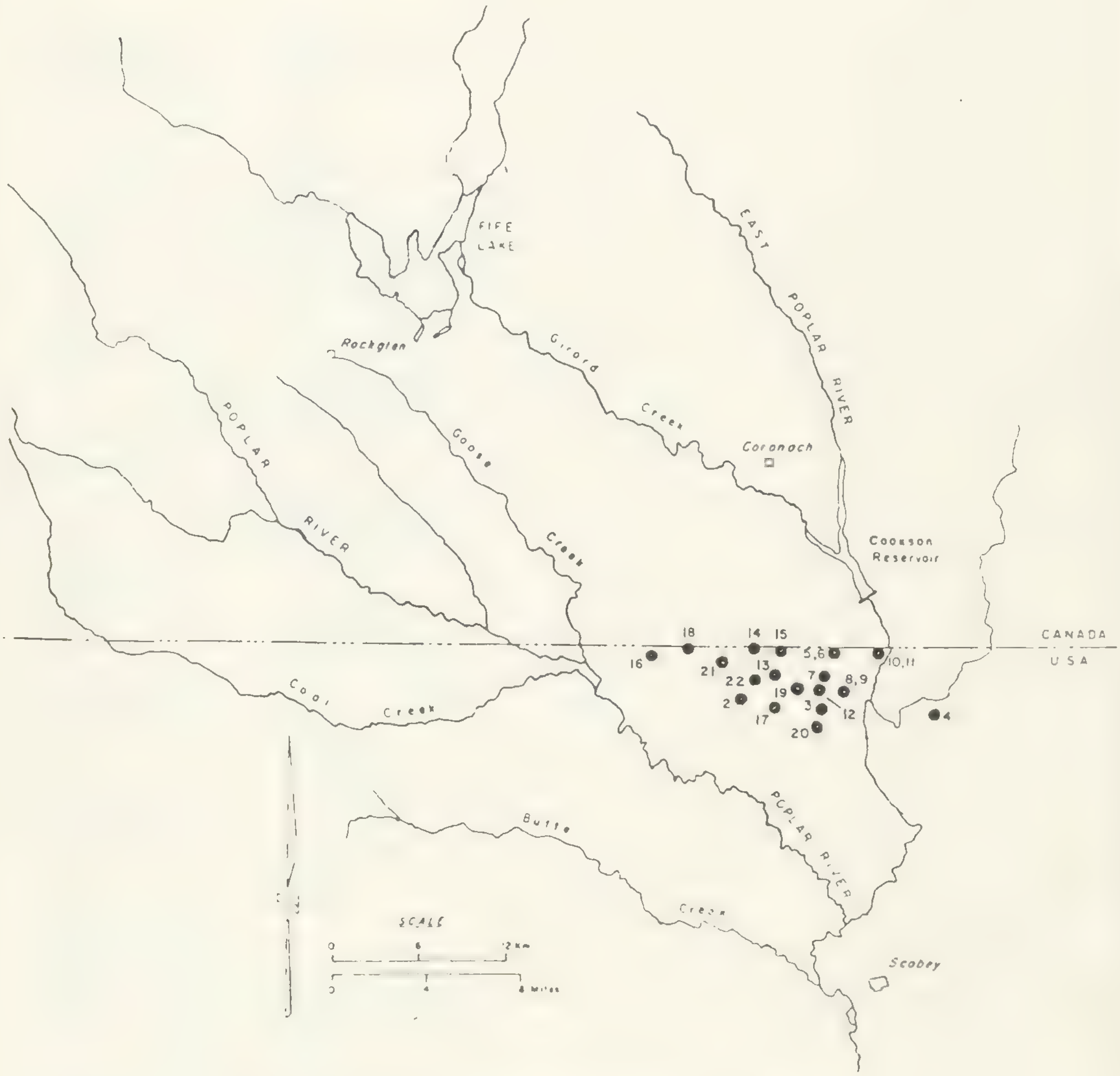
WATER QUALITY DATA

DATE	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SPECIFIC CONDUCTANCE LAB (US/CM) (90095)	ALKALINITY LAB (MG/L AS CACO3) (90410)
JAN 1986											
14...	--	--	1200	4.9	1.6	51	<0.01	72	0.29	1750	678
MAR											
25...	<1	<1	670	60	0.91	84	0.02	28	2.5	997	369
APR											
15...	--	--	880	29	1.2	93	0.01	26	0.64	1340	480
MAY											
14...	--	--	880	48	1.2	--	0.01	115	6.3	1390	470
JUN											
18...	--	--	800	7.9	1.1	92	<0.01	9	0.09	1240	465
JUL											
16...	--	--	740	8.3	1.0	53	0.02	10	0.11	1110	428
AUG											
19...	--	--	1000	3.7	1.4	--	0.01	--	--	1510	528
SEP											
17...	<1	--	1100	11	1.5	--	<0.01	--	--	1600	542
OCT											
15...	--	--	890	7.2	1.2	65	<0.01	37	0.3	1290	454
NOV											
13...	--	--	1200	9.8	1.6	82	0.01	30	0.24	1790	651
DEC											
15...	--	--	1300	11	1.7	--	<0.01	--	--	1380	648

GROUND WATER LEVELS TO MONITOR POTENTIAL DRAWDOWN DUE TO COAL SEAM DEWATERING

Responsible Agency: Montana Bureau of Mines and Geology

No. on Map	Sampling
2 to 22	Determine water levels quarterly



GROUND WATER PIEZOMETERS TO MONITER POTENTIAL

DRAWDOWN DUE TO COAL SEAM DEWATERING

Water Level Measurements

DEPTH TO WATER FROM GROUND SURFACE, IN FEET

DATE/GWQQC NO.	2	3	4	5	6	7	8	9	10	11
04/09/86	218.29	82.00	60.73	20.85	21.34	79.01	13.69	14.19	5.74	-1.02
06/20/86	217.75	81.85	60.52	20.83	20.79	78.58	14.09	14.62	5.86	-1.05
09/27/86	217.66	81.82	60.57	20.09	20.49	78.47	13.83	14.39	5.87	-1.05
12/18/86	217.83	81.75	60.52	19.75	20.30	78.40	13.57	14.12	5.80	

DATE/GWQQC NO.	12	13	14	15	16	17	18	19	20	21	22
04/09/86	Dry	135.04	212.56	224.51	41.72	248.43	247.96	126.49	Dry	240.67	18.14
06/20/86	Dry	134.99	212.54	224.34	41.05	247.98	247.79	126.17	Dry	240.63	17.93
09/27/86	Dry	134.72		223.58	38.26	246.91	247.64	126.06	Dry		14.22
12/18/86	Dry	134.59	212.62	224.13	36.99	249.03	247.70	126.03	Dry	241.18	13.87

(-)Indicates water level above land surface

CHEMICAL DATA FROM GWQQC OBSERVATION WELLS

GWQQC No.	Date Collected	Total Depth feet	Lab. S.C. uS/cm	pH (*lab)	Water temp. °C	Total Hardness (as $CaCO_3$) mg/L	Total Alkalinity (as $CaCO_3$) mg/L	Sodium Absorption Ratio	Calculated Dissolved Solids (TDS) mg/L	Sum of Dissolved Constituents mg/L	Calcium (Ca) mg/L	Magnesium (Mg) mg/L	Sodium (Na) mg/l
2	10/2/86	258	893	7.26	8.0	368	440	0.68	452	707	134.0	8.1	29.9
3	10/02/86	117	1225	7.98	6.9	527	683	1.71	732	1155	100.0	67.4	90.1
4	09/30/86	340	1206	7.46	9.1	44.6	381	16.4	661	897	13.6	2.6	252.0
5	09/30/86	53	736	7.63	6.9	331	321	0.82	428	627	67.5	39.4	34.1
6	09/30/86	83	835	7.46	8.1	342	366	1.42	507	733	63.3	44.7	60.2
7	10/01/86	147	775	7.34	7.8	341	399	1.26	481	728	65.1	43.3	53.5
8	09/30/86	45	1064	7.46	7.4	332	441	2.79	658	931	64.0	41.9	117.0
9	09/30/86	208	1322	7.87	7.4	146	592	9.52	807	1173	29.0	17.8	264.0
10	10/01/86	43	893	7.59	7.4	273	395	2.76	562	806	50.3	35.9	105.0
11	10/01/86	218	1721	8.92	8.2	23.3	663	35.2	967	1377	6.2	1.9	390.0

GWQQC No.	Potassium (K) mg/L	Iron (Fe) mg/L	Manganese (Mn) mg/L	Silica (SiO_2) mg/L	Bicarbonate (HCO_3) mg/L	Carbonate (CO_3) mg/L	Chloride (Cl) mg/L	Sulfate (SO_4) mg/L	Sulfide mg/L	Nitrate (NO_3 as N) mg/L	Fluoride (F) mg/L
2	7.8	0.29	0.099	6.6	503	0.0	11.0	3.4		0.08	3.20
3	6.1	0.032	0.16	17.8	833	0.0	8.6	31		0.58	0.1
4	3.5	0.210	0.12	6.9	464	0.0	135	17.8		0.02	1.2
5	3.3	<.002	<.001	16.2	392	0.0	3.4	68.3		2.16	0.3
6	3.9	0.22	0.067	15.5	447	0.0	4.3	93.8		0.05	0.3
7	4.5	0.57	0.085	16.8	487	0.0	2.0	54.4		0.06	0.4
8	5.2	0.78	0.11	15.9	538	0.0	3.7	144		0.09	0.3
9	3.5	0.037	0.04	10.5	722	0.0	6.5	119		0.04	0.6
10	4.0	2.18	0.099	15.7	482	0.0	4.6	106		0.02	0.30
11	1.0	0.42	0.005	18.1	808	0.0	147	1.8		0.02	2.5

GWQQC No.	Ammonia -Total (NH_3 as N) mg/L	Strontium (Sr) ug/L	Aluminum (Al) ug/L	Arsenic (As) ug/L	Barium (Ba) ug/L	Boron (B) ug/L	Cadmium (Cd) ug/L	Chromium (Cr) ug/L	Cobalt (Co) ug/L	Copper (Cu) ug/L	Lead (Pb) ug/L	Lithium (Li) ug/L	Mercury (Hg) ug/L
2		140	<30	1.4		140	<2	<2		<2		26	0.25
3		1530	<30	5.0		1390	<2	<2		<2		69	0.12
4		92	<30	3.9		760	<2	<2		<2		37	0.10
5		540	<30	0.6		320	<2	<2		<2		30	0.16
6		790	<30	0.5		1020	<2	<2		<2		49	0.34
7		840	<30	0.6		950	<2	<2		<2		49	0.30
8		820	<30	2.9		1300	<2	<2		<2		68	0.22
9		490	<30	1.2		2020	<2	<2		<2		71	0.19
10		650	<30	9.4		1120	<2	<2		<2		61	0.39
11		150	<30	1.0		2030	<2	<2		<2		58	0.05

GWQQC No.	Molybdenum (Mo) ug/L	Nickel (Ni) ug/L	Selenium (Se) ug/L	Silver (Ag) ug/L	Titanium (Ti) ug/L	Uranium (U) ug/L	Vanadium (V) ug/L	Zinc (Zn) ug/L	Zirconium (Zr) ug/L	Lab Number
2	<20	<10	0.2	<2	1		<1	2600	<4	86-1141
3	<20	<10	<.1	<2	<1		<1	<3	<4	86-1142
4	<20	<10	<.1	<2	2		<1	160	<4	86-1143
5	<20	<10	7.9	<2	1		<1	<3	<4	86-1144
6	<20	<10	<.1	<2	<1		<1	<3	<4	86-1145
7	<20	<10	<.1	<2	<1		<1	<3	<4	86-1146
8	<20	<10	<.1	<2	<1		<1	<3	<4	86-1147
9	<20	<10	<.1	<2	<1		<1	<3	<4	86-1148
10	<20	<10	.1	<2	1		<1	<3	<4	86-1149
11	<20	<10	<.1	<2	13		<1	<3	<4	86-1150

CHEMICAL DATA FROM GWQQC OBSERVATION WELLS

GWQQC No.	Date Collected	Total Depth feet	Lab. S.C. uS/cm	pH (*lab)	Water temp. °C	Total Hardness (as $CaCO_3$) mg/L	Total Alkalinity (as $CaCO_3$) mg/L	Sodium Absorption Ratio	Calculated Dissolved Solids (TDS) mg/L	Sum of Dissolved Constituents mg/L	Calcium (Ca) mg/L	Magnesium (Mg) mg/L
13	10/01/86	205	1576	7.35	6.8	209	633	10.14	936	1327	39.0	27.2
14	10/01/86	271	1155	7.99	8.1	151	472	7.98	735	1027	20.2	24.6
15	10/01/86	293	855	7.85	7.6	142	394	5.19	497	741	28.5	17.1
16	10/04/86	85	1122	7.99	6.8	232	430	5.80	723	990	29.9	38.2
17	10/02/86	288	1338	7.18	7.2	588	670	1.72	847	1262	104	79.9
18	10/04/86	296	621	7.36	8.8	288	283	0.54	336	511	43.8	43.5
19	10/04/86	195	801	7.46	7.4	318	388	1.59	488	728	64.1	38.3
21	10/07/86	350	1089	8.25	9.4	49.45	463	14.73	664	950	8.1	7.1
22	10/02/86	68	623	7.8	7.2	320	317	0.53	357	554	41.3	52.7

GWQQC No.	Sodium (Na) mg/L	Potassium (K) mg/L	Iron (Fe) mg/L	Manganese (Mn) mg/L	Silica (SiO_2) mg/L	Bicarbonate (HCO_3) mg/L	Carbonate (CO_3) mg/L	Chloride (Cl) mg/L	Sulfate (SO_4) mg/L	Nitrate (NO_3 as N) mg/L
13	337	5.6	0.94	0.33	18.1	772	0	4.0	123	0.08
14	226	5.3	0.046	0.049	11.0	575	0	4.3	160	0.04
15	142	5.4	0.14	0.049	13.7	480	0	3.0	50.6	0.04
16	203	8.2	0.22	0.066	5.2	525	0	6.9	172	0.43
17	95.9	6.3	0.14	0.88	27.1	817	0	6.2	124	0.04
18	21.0	6.8	0.19	0.049	11.6	345	0	3.0	31.9	4.30
19	65.2	3.2	0.51	0.10	18.3	473	0	2.8	62.4	0.06
21	238	4.3	0.70	0.065	27.3	564	0	5.5	94.4	0.03
22	21.7	1.3	0.011	0.007	15.6	387	0	3.8	25.2	4.65

GWQQC No.	Fluoride (F) mg/L	Aluminum (Al) ug/L	Arsenic (As) ug/L	Boron (B) ug/L	Cadmium (Cd) ug/L	Chromium (Cr) ug/L	Copper (Co) ug/L	Lithium (Li) ug/L	Mercury (Hg) ug/L	Molybdenum (Mo) ug/L
13	0.5	79	15	2150	<2	<2	<2	85	.17	<20
14	0.5	<30	7.5	1590	<2	<2	<2	75	.30	<20
15	0.5	<30	2.9	1500	2.0	<2	<2	63	.12	<20
16	0.4	<30	3.9	1160	<2	<2	<2	67	.17	<20
17	0.3	<30	3.2	1000	<2	<2	<2	63	<.04	<20
18	0.3	<30	3.4	340	<2	<2	<2	34	.28	<20
19	0.5	<30	0.5	723	<2	<2	<2	46	.16	<20
21	0.9	464	13	1997	<2	<2	<2	57	.21	<20
22	0.8	<30	0.8	91	<2	<2	<2	22	.26	<20

GWQQC No.	Nickel (Ni) ug/L	Selenium (Se) ug/L	Silver (Ag) ug/L	Strontium (Sr) ug/L	Titanium (Ti) ug/L	Vanadium (V) ug/L	Zinc (Zn) ug/L	Zirconium (Zr) ug/L	Lab Number
13	<10	0.1	<2	520	<1	<1	160	<4	86-1151
14	<10	0.2	<2	400	<1	<1	<3	<4	86-1152
15	<10	0.1	<2	540	<1	<1	<3	<4	86-1153
16	<10	0.3	<2	440	1	<1	<3	<4	86-1154
17	<10	0.1	<2	1140	<1	<1	3	<4	86-1155
18	<10	0.1	<2	600	<1	<1	<3	<4	86-1156
19	<10	0.2	<2	610	<1	<1	<3	<4	86-1157
21	<10	0.5	<2	100	6	<1	<3	<4	86-1158
22	<10	3.2	<2	410	1	<1	<3	<4	86-1159